

REMARKS

This Amendment is in response to the Official Action of June 27, 2003. In such Official Action, Claims 49-79 were rejected under 35 U.S.C. §103. Those claims have been cancelled without prejudice by the instant Amendment, and Claims 80-110 are submitted. Independent Claim 80 is similar to, but somewhat modified from, prior Claim 49. In the same manner, independent Claims 109 and 110 are respectively similar to, but at the same time modifications of, cancelled Claims 78 and 79.

The invention herein is primarily directed to apparatus for feeding dairy cattle, although the claims are not limited to dairy cattle, as such. Animal husbandry has seen very significant improvements over the years for increasing the quantity and quality of milk produced by dairy cows. Some years ago it was discovered that by providing a means to identify individual cows, it was possible to regulate their diets in a manner that the cows consumed a more healthy diet which could be tailored to their individual needs. Somewhat surprisingly, dairy farmers who adopted this method of feeding their herds soon learned that the herds as a whole and as well as many individual cows had, in fact, often been overeating and thus, by using the method, a saving occurred in the amount of the various types of consumables which the cattle consumed. Many innovations for mechanically delivering various animal feeds to the animals followed and, in more recent years, one of the leading inventors in the fields has been the first named Applicant of this Application, Karel van den Berg. One of the problems with many such mechanisms placed on the market is that the feed was delivered by augers which tended to become clogged, particularly when the feed was mixed with water or other liquid. The instant invention overcomes this difficulty by utilizing gripping means or a bucket or shovel for moving various types of feed from the container to the feeding trough where the feeds are consumed. When

granular or pulverulent material is being utilized, the invention provides that the detaching member can be closed to prevent the loss of feed during transport. In addition, the robot arm which is utilized for transporting the feed from the container to trough is provided with cleaning or brushing means, or both, to prevent clogging and providing measured portions. The robot arm provides other advantages in that it can also comprise weighing means and have animal identification means attached thereto. This is particularly advantageous where a feeding column is utilized with a number of feeding troughs, usually twelve, so that it is not necessary to provide each trough with animal identification means.

A robot arm device also works well wherein the feed containers are individually filled with different types of feed. Thus, in the light of the needs of individual dairy cattle, the robot arm can select and provide individual cows with feeds in advantageous sequences and amounts.

In the Official Action, Claims 49, 50, 53-58, 63, 64, 66-68 and 70-77 were rejected under 35 U.S.C. §103 as being unpatentable based on U.S. Patent No. 5,983,833 which issued November 16, 1999 wherein the inventor was Cornelis van der Lely. Mr. van der Lely was a prolific inventor being named as an inventor in 600 more or less U.S. patents and greatly more foreign patents. He founded the "Lely" company, well known in the agricultural industry, that has and continues to produce farm machinery including dairy equipment, that have a longstanding reputation for being rugged and efficient. The present inventors, who are also of the "Lely" company, learned directly or indirectly from Cornelis van der Lely, and continue his tradition in the invention and production of robust and practical farm machinery such as represented by the instant invention.

U.S. Patent No. 5,983,833 is directed primarily to an apparatus for cleaning a shed for animals such as cows. The apparatus moves through the shed from an overhead rail and is

guided by detectors and controls so that the shed can be selectively cleaned. However, it also includes a fodder pick-up device for moving fodder from a silo for distributing it into feed troughs located in the shed. The pick-up device includes a gripping member and is also supported by rails suspended from the roof of the shed. It can pick up fodder and other material at any place within the shed.

In the Official Action it was stated in regard to Claim 49, which is similar to Claim 80 herein, that van der Lely teaches an apparatus for automatically detaching and displacing feed for animals which comprises a container (feed silo 7) for animal feed and an animal feed stand 3 for receiving animal feed from the silo. See Figure 1. The animal feed stand 3 accommodates an animal to consume the animal feed. A robot arm construction 49 (see Figure 7) for detaching part of the animal feed in the silo 7 and displacing means for selectively displacing the detached part of the animal feed into feed stand 3 is provided. It is admitted in the Official Action that this reference fails to teach that the animal feed stand 3 and the silo be "integrated." It is alleged that, however, it would have been obvious to one having ordinary skill in the art at the time the invention was made to integrate these two components citing Howard v. Detroit Stove Works, 150 US 164 (1893).

It is submitted with respect to the decision in Howard v. Detroit Stove Works wherein Mr. Justice Jackson delivered the opinion of Court and in which three patents were involved relating to improvements in heating stoves, that the decisions concerning the three patents were based on findings of unpatentability over the prior art and do not justify the purpose for which the case is being cited. More specifically, on page 170 of the U.S. Report, it was stated that as to the third patent, it was void because the claims were clearly anticipated, and because it involved no invention to cast in one piece an article of which has formerly been cast in two pieces and put

together, nor to make the shape of the grate correspond with that of the fire pot. This is a far cry from considering the opinion to stand for the broad proposition that integrating two pieces into one piece is not inventive. Indeed, failure to make such an actual integration will result in a holding of no reduction to practice in Interference Proceedings.

In U.S. Patent No. 5,983,833, column 2, in the paragraph commencing on line 30 and extending to line 57, it is noted that fodder can be automatically transported with the aid of the gripping means from a silo to the animals' feed stands. But there is no suggestion for providing a plurality of storage containers for the animals' feed and a robot arm which is constructed and arranged to move an amount of feed from a selected container to a selected animal feed stand as set forth in independent Claim 80 (which corresponds to prior Claim 49). Independent Claim 109 also provides for a plurality of storage containers and the selective displacement of a portion of an animal consumable to a selected trough. In a somewhat similar manner, independent Claim 110 also recites a selected said container wherein animal feed is displaced from a selected one of such containers to a selected one of the troughs.

Accordingly, the invention as claimed presently in independent Claims 80, 109 and 110 is not taught by van der Lely U.S. Patent No. 5,983,833. The patent does teach gripping means 48 for picking up fodder. It also teaches (column 5, see lines 31-37) that the height as well as the distribution of fodder in feed group 4 can be programmed so that the fodder is automatically distributed by means of gripper means 48 and, in another embodiment, four sensors may be provided along the feed groove by means of which the height of the distribution of the fodder or both can be determined so that, on the basis of such data, the operations of the gripping means 48 can be controlled. Thus, in a sense, the reference provides an indication of the versatility of

robot arm 2 but, at the same time, it fails to teach important aspects of the instant invention as set forth in the claims as now presented.

Concerning Claim 50 (new Claim 82), although it is true that van der Lely teaches a gripping element, that gripping element is not telescopic as in the instant Application and as set forth in present Claim 82.

Regarding Claim 53 which corresponds to present Claim 86, whereas the van der Lely reference does teach cleaning means, that cleaning means appears to be for cleaning the floor of the shed, not the detaching means.

With reference to Claim 54 (new Claim 86), cleaning means 14 are for cleaning the shed floor, not the detaching means.

Concerning Claim 55, which corresponds to present Claim 87, again the van der Lely reference is not understood to teach a brushing means for brushing substances from the detaching means. Therefore, in reference to Claim 56 corresponding to present Claim 88 which is dependent on present Claim 86, the combination of a sweeping element together with cleaning means for cleaning and detaching means does not appear to be taught by the van der Lely reference. The same is true with respect to prior Claim 57. Present Claim 89 which is dependent on Claim 87 is similar and, again, the sweeping element does not appear to be combined with brushing means for brushing substances from the detaching member.

Concerning Claim 58 which corresponds to present Claim 90, it is true that the van der Lely reference discloses that the height as well as the distribution of fodder in the groove 40 can be programmed and four sensors can be provided along the feed groove by means of which the height and distribution of the fodder, or both, can be determined. But this does not teach doing so in a manner to provide that part of the animal feed which comprises a predetermined

measured-out portion of the animal feed that is detached by the detaching means is being metered. Measuring the height and distribution of fodder in feed groove 4 is not the same.

Concerning the rejections of Claims 63, 64, 66-68, 70, 71-73 and 75-77, which correspond to Claims 81, 95, 97-99, 101, 102-104 and 106-108, the Official Action is attempting to shoehorn Figures 1 and 7 of the van der Lely reference into the claims involved which in the instant case depend from and are part of Claim 80 which provides for a plurality of feed containers. In Figure 1 of the reference, both cleaning means for cleaning the shed floor and gripping means for picking up fodder are disclosed. But clearly the disclosure does not extend to a plurality of feed containers from which a robot arm can provide different feed mixtures to the individual troughs because the only feed is provided from silo 7. It is not logical or suggested to make a difference between the feed provided to the right and left hand feed grooves 4. Specifically concerning Claim 75, which corresponds to Claim 106 herein, the claim is directed to the troughs and the containers being positioned in close proximity and disposed in a common vertical plane whereby the robot arm detaches feed from the container and places such feed into the trough directly and rapidly. In the Official Action it is stated that once these elements were integrated, as considered with Claim 79 (corresponding to Claim 80 herein), it would have been obvious to one having ordinary skill in the art to position elements in a desired manner inasmuch as it has been held that rearranging parts of an invention involves only routine skill in the art, citing a Court of Customs and Patent Appeals case of In re Japikse (CCPA 1950) wherein the opinion was delivered by Chief Judge Garrett. But this case appears to be based on the prior art. It does not support a broad position that rearranging parts of an invention involves only routine skill in the art. The only statement which might be alleged to be to this effect was that shifting the starting switch as disclosed by the reference Cannon to a different position would not be

inventive because the operation of the device would not be thereby modified. This is far removed from the case which would be involved in substituting a silo which is completely outside the milking compartment and troughs therein for troughs immediately below the storage containers whereby the robot arm can readily and rapidly take feed from the storage container and place it in the underlying trough.

Claims 51 and 52 which correspond to new Claims 83 and 84 were rejected on the basis of van der Lely in view of Wilman. In prior Claim 51 and new Claim 83, the detaching means comprises a bucket. In prior Claim 52 (now Claim 84) the detaching means comprises a shovel. Concerning Claim 51 (new Claim 83) it is stated on page 7 of the Official Action that the Wilman reference shows that it is well known in the art of material handling to use a bucket structure to pick up material for transporting and therefore would have been obvious to modify the apparatus disclosed by van der Lely to incorporate a bucket as a detaching means to ensure that the feed is completely contained in transport.

Concerning Claim 52, the same statement is made except that it is intended to apply to a shovel structure.

U.S. Patent No. 4,565,485, to Wilman, relates to two grab members, one or both of which may have tines. The grab members can be open and closed to grab cohesive or rigid material that can be grasped between the tines. Although the devices are particularly suited for mounting on the tractor vehicle, it is stated that the combined grab and scoop facility is applicable also to implements, utensils, tools or other apparatus, large or small, for material handling. Despite this statement, nothing was found in the Wilman patent which would lead to the use of the grab members to move animal feed from a selected animal feed container to a selected animal feed trough. This is true even though it is stated in the Specification of the reference that when acting

as a scoop or bucket loader, the invention is capable of handling loose material such as soil, sand or slurry. Assuming, but certainly not admitting, that with modifications the grab members Wilman might be utilized as a bucket or shovel for the detaching means of the instant invention, there is no suggestion set forth that this be done and it is doubtful that the inventors would seriously consider the substitution in any event.

Prior Claims 59, 60, 65, 69, 78 and 79 were rejected under 35 U.S.C. §103 on the basis of van der Lely as modified in view of U.S. Patent No. 4,981,107 to Beaudoin et al, which is directed to a computerized automatic cattle feeder system. These claims respectively correspond to new Claims 91, 92, 96, 100 and independent Claims 109 and 110.

Concerning Claims 59 and 60 (new Claims 91 and 92), it is disclosed that van der Lely, as modified, discloses the claimed invention except for specifying a weighing means for the detached animal feed, but Beaudoin et al teach an automatic feeder system having weighing means 41. It is further stated that it would have been obvious to place weighing means on the robot arm of van der Lely since it has already been shown that the robot arm houses the detachment means. Therefore it is alleged that the weight measurement is made when needed to be made when the feed is picked up by the robot arm and prior to distribution into a trough. However, Beaudoin et al teaches in Figure 10 two worm gears 63 and 63' which control the selected delivery of rations on either one of the ramps 69 or 69' and into the relevant troughs 70 and 71'. Conveyor 93 has a weighing balance 95 which may be the same kind as a first balance 41 that signals a computer to stop rotation of the worm screw to cause the rotation of one or the other to start when the right quantity of ingredients has fallen. Balance 41 essentially comprises a flat scale 93 mounted on return springs 45 so that, in unloaded condition, it barely touches the subsurface of the upper strand belt of the endless conveyor 13. Located centrally of the strand

47, is an electronic sensor device 49, operatively connected to computer 3 and having a sensing stud 51 in contact with the strand 47. Rotation of worm gear 25 discharges the ingredient in hopper compartment 21 on upper strand 47 which flexes downwardly and presses on sensing stud 51. Once the prescribed amount has fallen, the sensor device 49 orders through computer 3 stopping of motor 33 and thus of worm gear 25 and the actuation of worm gear 25' which then rotates until the right quantity of the ingredient in the hopper compartment 21' has been discharged and the ration is delivered to conveyor 13 and thence on one of ramps 69 or 69' and into the corresponding one of the troughs 71 or 71'. With this description in mind, it is submitted it would be doubtful that the weighing mechanism taught in the Beaudoin et al patent could be utilized on Applicant's robot arm. Although weighing means for animal feed troughs are not unknown, neither the Beaudoin et al reference nor the prior art of record remotely suggest the utilization of a weighing device on a robot arm. Indeed, the concept may be patentable, as such, and, in any event, Claims 83 and 84 which are dependent on Claim 80 are directed to subject matter which falls well within the statutory criteria of patentability as set forth in 35 U.S.C. §103.

Concerning Claim 65, which corresponds to new Claim 96, the claim is dependent on Claim 64 (new Claim 95) and is directed to each container containing one of the components set forth in Claim 64 which is different from the component in another container. The Official Action on page 8 correctly states that U.S. Patent No. 4,981,107 of Beaudoin et al in Figure 8 discloses two compartments 21 and 21' which contain two ingredients. However, there is no teaching that this structure could be utilized in the van der Lely et al construction. Moreover, Beaudoin et al teach that rations from both compartments are provided at the same time to the troughs 71 and 71'. In addition the transport means is quite different. In Beaudoin et al worm screws 25 and 25' are utilized in combination with an endless member or strand 47 to deliver the

rations to the troughs. In Applicants' invention the transport of the feed to a trough is selectively accomplished by robot arm 2. The advantages of robot arm 2 vis-à-vis augers has already been discussed.

With respect to Claim 69 which corresponds to new Claim 100, the claim is directed to a chute via which the animal feed can be discharged to the animal feed stand. In this connection it is alleged in the Official Action that Beaudoin et al teach an automatic feeder and conveyor belt leading to chute 69 and 69' to distribute feed in troughs 71 and 71'. However, reference numerals 69 and 69' in the Beaudoin et al reference are not chutes but are instead are ramps. The terms are not synonymous and it is submitted that Beaudoin et al teach the use of ramps, not chutes. In any event, Claim 80, upon which Claim 100 depends, requires a robot arm having detaching means for detaching part of the animal feed from a selected container which Beaudoin et al do not teach but, if anything, lead away from.

In the paragraph of the Official Action bridging pages 8 and 9, independent Claim 78 which corresponds to new Claim 109 is rejected on the basis of van der Lely, as modified, in view of Beaudoin et al. As previously stated with reference to prior Claim 49 and new Claim 80, there is no suggestion of providing a plurality of containers with different types of feed in the van der Lely et al reference. Also the van der Lely et al reference does not disclose detaching means for detaching a predetermined portion of an animal's consumables in a selected trough. To import these concepts from Beaudoin et al into van der Lely it is not suggested by the prior art of record. It would, in any event, require a considerable modification of the van der Lely disclosure.

The above comments relative to prior Claim 78 and new Claim 109 also are applicable to prior Claim 79 which corresponds to new Claim 110. Whereas it can be alleged that Beaudoin et

al teach means for obtaining a predetermined amount of an animal consumables, it definitely does not teach a bendable robot arm which is constructed and arranged to move animal feed from a selected one of the containers to a selected one of the troughs. There is nothing in van der Lely also that teaches this. Accordingly, as with Claim 109, the rejection of Claim 110 on the basis of 35 U.S.C. §103 cannot be sustained.

In the paragraph of the Official Action that bridges pages 9 and 10, prior Claim 61 and 62 were rejected on the basis of 35 U.S.C. §103. This rejection is predicated on the combination of van der Lely in view of U.S. Patent No. 4,672,917 to Fox for an apparatus for feeding farm animals. Prior Claim 61 corresponds to new Claim 93 and is dependent on prior Claim 49 which corresponds to new Claim 80. The claim is directed to animal identification means for identifying an animal in the immediate vicinity of the feed stand for the purpose of consuming animal feed received therein. As previously discussed, animal identification means are well known and no claim is made herein for the broad concept of utilizing animal identification means in an apparatus for automatically feeding animals. However, considering Claim 93 within the ambit of Claim 80 from which it depends it is submitted that the invention so defined, as a whole, is patentable over the cited references.

Concerning prior Claim 62 which corresponds to new Claim 94 and was dependent on prior Claim 61 (new Claim 93) the animal identification means is mounted on the robot arm. But the patent to Fox does not teach a robot arm. Instead it teaches an entirely different concept, recognizing that systems provided by prior art are expensive and are not usual on farms where animals are kept in individual stalls. Thus Fox provides a hopper mounted for movement along a path which includes a plurality of stalls. It is stated that the hopper preferably contains several compartments to allow feed having different characteristics to be dispensed in varying amounts

depending on a particular animal's requirements. A feeding bowl extends outwardly from the bottom of the hopper and a discharge opening of the hopper is located with respect to the bowl so that feed from each of the compartments is dispensed into the bowl. The bowl 6 might be considered a chute. At the end of the bowl 6 is an identification means 42 which identifies the cow in the stall to which the movable hopper is provided. There is no suggestion which would lead to the combination of Applicant's robot arm and the structures otherwise defined in Claim 80 that would lead to the placement of an identification means on the robot arm. As previously indicated in respect to placing a weighing element on the robot arm, a case could be made that prior Claim 62 which corresponds to new Claim 94 is patentable, per se. Moreover, the structure claimed in Claim 80 as shown in Figure 1 is stationary with only the robot arm being movable therein. By placing the identification means on the robot arm, it is not necessary to have separate identification means for every compartment (usually twelve) that typically surrounds the Figure 1 device. Fox teaches moving the identification means to the location of the animal. But Fox does so by placing the identification means on a chute, not on a robot arm. Yet further, Fox leads away from in concept the use of individual stalls. Instead he moves the hopper and all to where the animal is located.

The undersigned agrees that the suggestion or motivation to modify the teachings of a reference or to combine references may be implicit from the prior art as a whole rather than expressly stated in a reference. But whether express or implicit, a showing must be provided as to the basis for the suggestion or motivation and broad conclusory statement standing alone are not sufficient. The showing must be sufficient to counter the potential weakness in the obviousness construct because the suggestion to modify or combine stands as a critical safeguard against hindsight analysis and rote application of 35 U.S.C. §103. In this particular case, it

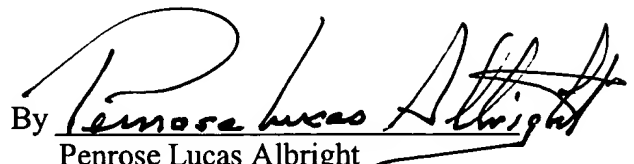
would appear that the rejections are predicated solely on the citations of prior art corollaries for the claimed elements, whereby the invention itself has been used as a blueprint for making modifications or piecing together elements in the prior art to defeat the patentability of the claimed invention.

It is submitted that the U.S. Patent and Trademark Office has before it objective evidence of what those skilled in the art have actually done in attempts to design various types of apparatus for feeding farm animals such as cows similar to the instant invention. However, these workers in the art did not find it obvious to make the modifications necessary to achieve Applicants' invention although the individual components may have been long readily available. The fact that, while all materials to accomplish the invention were available to those skilled in the art, they did not avail themselves thereof is evidence of invention. United States v. Adams, 383 U.S. 39, 51-52, 148 USPQ 479, 483-484 (1966).

It is, accordingly, submitted that Applicants' invention falls well within the criteria of patentability as defined in 35 U.S.C. §103 whereby an allowance of the claims submitted herewith will be proper and is therefore requested.

Respectfully submitted,

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